

**REMARKS**

Upon entry of this response and amendment, claims 18-22 and 24-38 are pending in this application. Claim 18 has been amended to incorporate language from the specification regarding the method of making the polyurethane dispersions. Support for the amendment to claim 18 can be found in the specification as originally filed, particularly at page 6, the fourth paragraph through page 7, the fifth paragraph. Accordingly, Applicants submit that no new matter within the meaning of 35 U.S.C. 132 is added by the amendments.

Claims 18-22, 24-28, 30, 32-34 and 37-38 stand rejected as being anticipated by U.S. Patent No. 4,408,008 to Markusch; and claims 18-22 and 24-38 also stand rejected as being obvious over U.S. Patent No. 4,408,008 to Markusch.

Based on the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections of the claims.

**1. Rejection of Claims 18-22 24-28, 30, 32-34 and 37-38  
under 35 U.S.C. § 102 (b)**

The Office Action states that claims 18-22, 24-28, 30, 32-34 and 37-38 are rejected under 35 U.S.C. §102 (b) as being anticipated by U.S. Patent No. 4,408,008 to Markusch (the '008 patent) for the reasons set forth in the Office Action.

**RESPONSE**

Applicants respectfully traverse this rejection. The test for anticipation is whether each and every element as set forth is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). Applicants respectfully submit that the '008 patent fails to teach each of the claimed elements. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claim 18 as amended is currently drawn to a method for making sports floor coverings comprising applying a formulation to a surface. The formulation comprises aqueous, isocyanate free polyurethane dispersions, wherein said dispersions have a solid matter content of  $\geq 30$  percent by weight and a solvent content of  $\leq 10$  percent by weight and wherein the polyurethane polymers of the dispersions have a number average molecular mass of 25,000 to

100,000 Daltons. The polyurethane dispersions are made by the process outlined in steps a) through f).

The above amendments to claim 18, though, clarify that the polyurethane polymers of the isocyanate free polyurethane dispersions used in the claimed method are obtained by the claimed production method which comprises the formation of a polyurethane pre-adduct which is subsequently further reacted to form a prepolymer. The production method claimed in claim 18 yields polyurethanes having a structure that is considered an ideally segmented linear structure.

More specifically, the claimed two-step production method for the polyurethane prepolymer (comprising steps (a) and (b) of amended claim 18) result in prepolymers displaying a highly uniform distribution of carboxy or carboxylate groups, i.e., a uniform distribution of charge density. The reason for this is that the formation of oligourethanes which would lead to a non-uniform distribution of charge density can be suppressed by way of producing the prepolymer via a pre-adduct. Through chain extension (comprising step (e) of amended claim 18) and the optional addition of a chain stopping component (comprising step (f) of amended claim 18), linear segment polymers having excellent mechanical properties are obtained. Thereby, the particular sequences of the chain

extension component do not influence the excellent mechanical properties of the polyurethane dispersions. Owing to the ideally segmented linear structure, the polyurethane polymers of the present invention are excellently suited for making sports floor coverings.

The '008 patent, on the other hand, teaches the preparation of polyurethane-prepolymers in a one-step process, and is silent with respect to the presently claimed process for preparing the polyurethane dispersions. In particular, the '008 patent does not teach the preparation steps of subparagraphs a) through f) of amended claim 18. Thus, based on the one-step process taught therein, the polyurethane prepolymers of the '008 patent do not contain the same excellent mechanical properties of the polyurethane polymers of the presently claimed invention.

Moreover, Applicants note that the prepolymers prepared in the working examples of the '008 patent are different from the prepolymers employed in amended claim 18 in further respects. For example, in working examples 1-8 and 10-13 of the '008 patent, the NCO/OH equivalent ratio is significantly below the claimed range of 1.5-2.5. Furthermore, the solvent content of N-methyl-2-pyrrolidinone (NMP) in working examples 1-7 and 10-13 of the '008 patent is significantly above the presently claimed upper limit of

10% by weight. For working examples 8 and 9, the NCO/OH ratios are 1.20 and 1.83, respectively, while the solvent contents are 9.99% and 0.99% respectively.

In addition, working example 8 of the '008 patent (which differs to the claimed NCO/OH ratio anyway) is not at all comparable to the prepolymer manufactured in accordance with the present claims. In working example 8 of the '008 patent, a cationic prepolymer is obtained (see col. 19, l. 62 of the '008 patent). Component (A)(iii) is not present in working example 8.

Further, the charge used in working example 9 of the '008 patent does not contain any component (A)(iii), either. Working example 9 uses a sulfonatediol instead of a component (A)(iii).

Therefore, Applicants respectfully submit that the prepolymers prepared in the '008 patent's working examples are different than the presently claimed prepolymers. In addition, the formation of the presently claimed polyurethane pre-adduct is neither taught nor suggested by the '008 patent.

Thus, Applicants respectfully submit that the '008 patent fails to teach each of the claimed features of claim 18, and therefore does not anticipate the claim. Likewise, the remaining claims depend from claim 18 and necessarily contain all of the features therein, and so the '008 patent also does not anticipate

the dependent claims. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection of the claims as being anticipated by the '298 patent.

**2. Rejection of Claims 18-22 and 24-38**  
**under 35 U.S.C. § 103(a)**

The Official Action states that claims 18-22 and 24-38 are rejected under 35 U.S.C. § 103(a) as being obvious in view of U.S. Patent No. 4,408,008 to Markush (the "008 patent"). The reasons for the rejection are given in the Official Action.

**RESPONSE**

Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof. The reference of record does not teach or suggest applicants' inventive subject matter as a whole as recited in the claims. The Examiner has failed to establish a *prima facie* case of obviousness against the presently rejected claims.

To establish a *prima facie* case of obviousness, the PTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive

that would have motivated the skilled artisan to modify a reference. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *Amgen Inc. v. Chugai Pharm. Co.*, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991). Lastly, the prior art reference must teach or suggest all the limitations of the claims. *In re Wilson*, 165 U.S.P.Q.2d 494, 496 (C.C.P.A. 1970).

As indicated above with respect to the anticipation rejection, claim 18 as amended is currently drawn to a method for making sports floor coverings comprising applying a formulation to a surface. The formulation comprises aqueous, isocyanate free polyurethane dispersions, wherein said dispersions have a solid matter content of  $\geq 30$  percent by weight and a solvent content of  $\leq 10$  percent by weight and wherein the polyurethane polymers of the dispersions have a number average molecular mass of 25,000 to 100,000 Daltons. The polyurethane dispersions are made by the process outlined in steps a) through f).

The polyurethane polymers of the isocyanate free polyurethane dispersions used in the claimed method are obtained by the claimed production method which comprises the formation of a polyurethane

pre-adduct which is subsequently further reacted to form a prepolymer. The production method claimed in claim 18 yields polyurethanes having a structure that is considered an ideally segmented linear structure.

More specifically, the claimed two-step production method for the polyurethane prepolymer (comprising steps (a) and (b) of amended claim 18) result in prepolymers displaying a highly uniform distribution of carboxy or carboxylate groups, i.e., a uniform distribution of charge density. The reason for this is that the formation of oligourethanes which would lead to a non-uniform distribution of charge density can be suppressed by way of producing the prepolymer via a pre-adduct. Through chain extension (comprising step (e) of amended claim 18) and the optional addition of a chain stopping component (comprising step (f) of amended claim 18), linear segment polymers having excellent mechanical properties are obtained. Thereby, the particular sequences of the chain extension component do not influence the excellent mechanical properties of the polyurethane dispersions. Owing to the ideally segmented linear structure, the polyurethane polymers of the present invention are excellently suited for making sports floor coverings.



The '008 patent, on the other hand, teaches the preparation of polyurethane-prepolymers in a one-step process, and is silent with respect to the presently claimed process for preparing the polyurethane dispersions. In particular, the '008 patent does not teach the preparation steps of subparagraphs a) through f) of amended claim 18. Thus, based on the one-step process taught therein, the polyurethane prepolymers of the '008 patent do not contain the same excellent mechanical properties of the polyurethane polymers of the presently claimed invention.

Therefore, Applicants respectfully submit that the prepolymers prepared in the '008 patent's working examples are different than the presently claimed prepolymers. In addition, the formation of the presently claimed polyurethane pre-adduct is neither taught nor suggested by the '008 patent.

Thus, Applicants respectfully submit that the '008 patent fails to teach each of the claimed features of claim 18, and does not contain a motivation to alter the reference in an attempt to achieve the presently claimed invention. Likewise, the remaining claims depend from claim 18 and necessarily contain all of the features therein.

Accordingly, Applicants respectfully submit that the Examiner has failed to prove a *prima facie* case of obviousness, and that

there is no motivation for a skilled artisan to modify the '298 patent. Therefore, Applicants respectfully submit that claims 18-22 and 24-38 are not obvious over the '008 patent. Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 18-22 and 24-38.

**CONCLUSION**

Claims 18-22 and 24-38 are currently pending in the present application. Applicants respectfully request the Examiner to reconsider and withdraw the rejections and allow all claims pending herein.

The Examiner is requested to contact the undersigned attorney if he has any questions or wishes to further discuss the merits of the presently pending claims.

Respectfully submitted,  
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